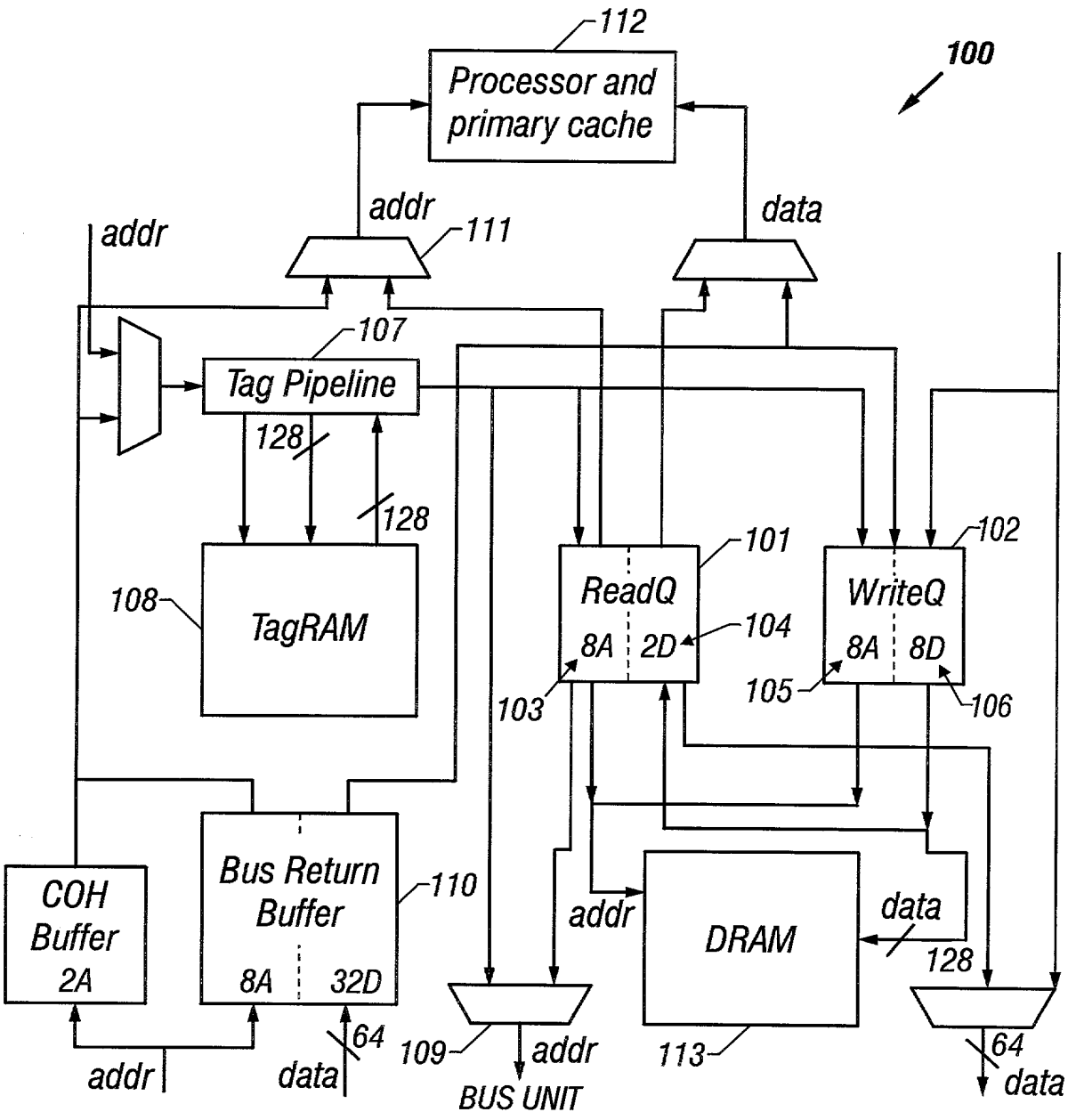
112
Processor and primary cache
100
addr
addr
111
data
107
Tag Pipeline
128
128
108
TagRAM
101
ReadQ
8A
2D
104
102
WriteQ
8A
8D
103
105
106
Bus Return Buffer
110
8A
32D
COH Buffer
2A
addr
data
64
109
addr
BUS UNIT
addr
DRAM
data
128
113
64
data

FIG. 1

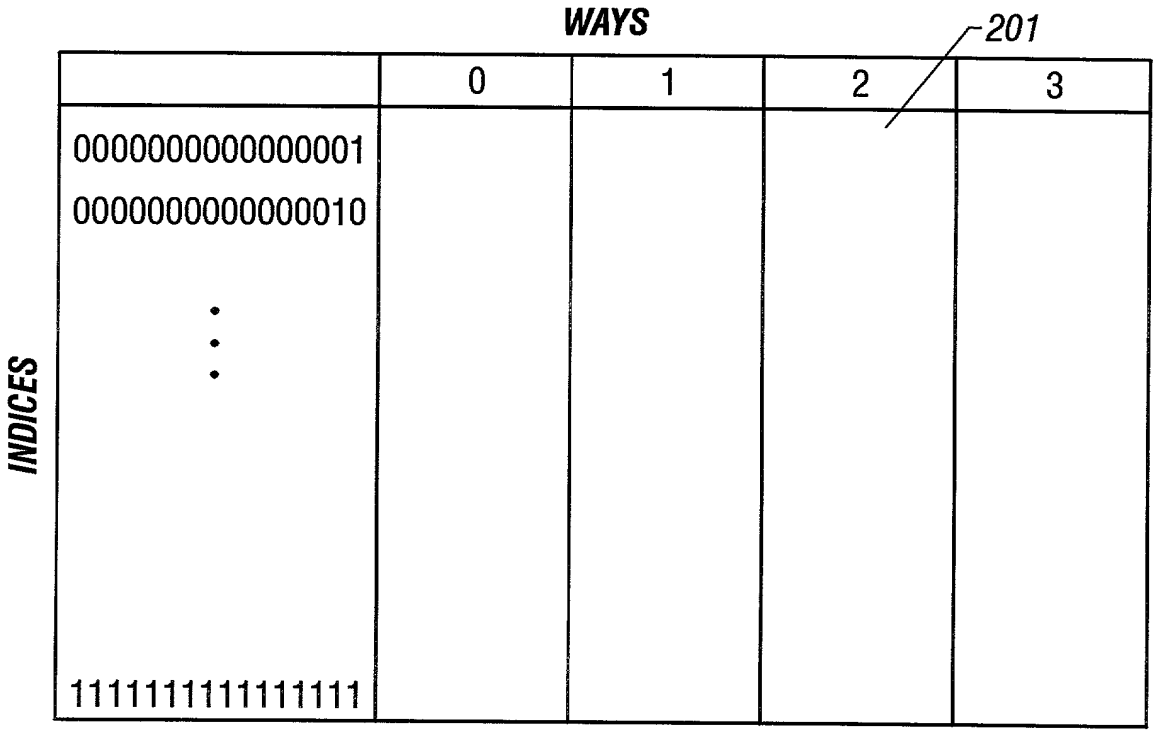

FIG. 2

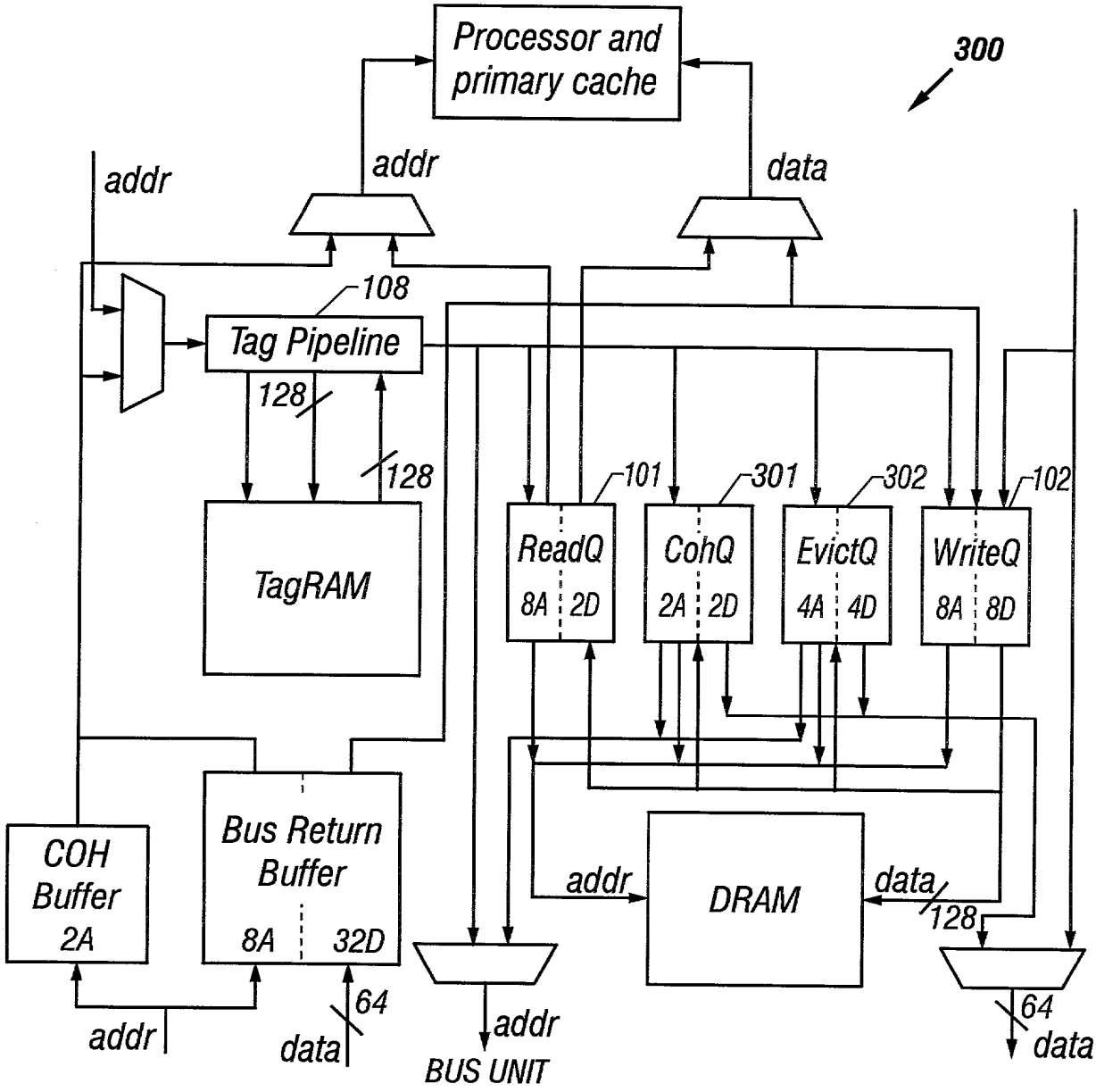
Processor and primary cache
300
addr
addr
data
108
Tag Pipeline
128
128
TagRAM
101
301
302
102
ReadQ
8A
2D
CohQ
2A
2D
EvictQ
4A
4D
WriteQ
8A
8D
COH Buffer
2A
Bus Return Buffer
8A
32D
addr
DRAM
data
128
addr
64
data
addr
BUS UNIT
64
data

FIG. 3

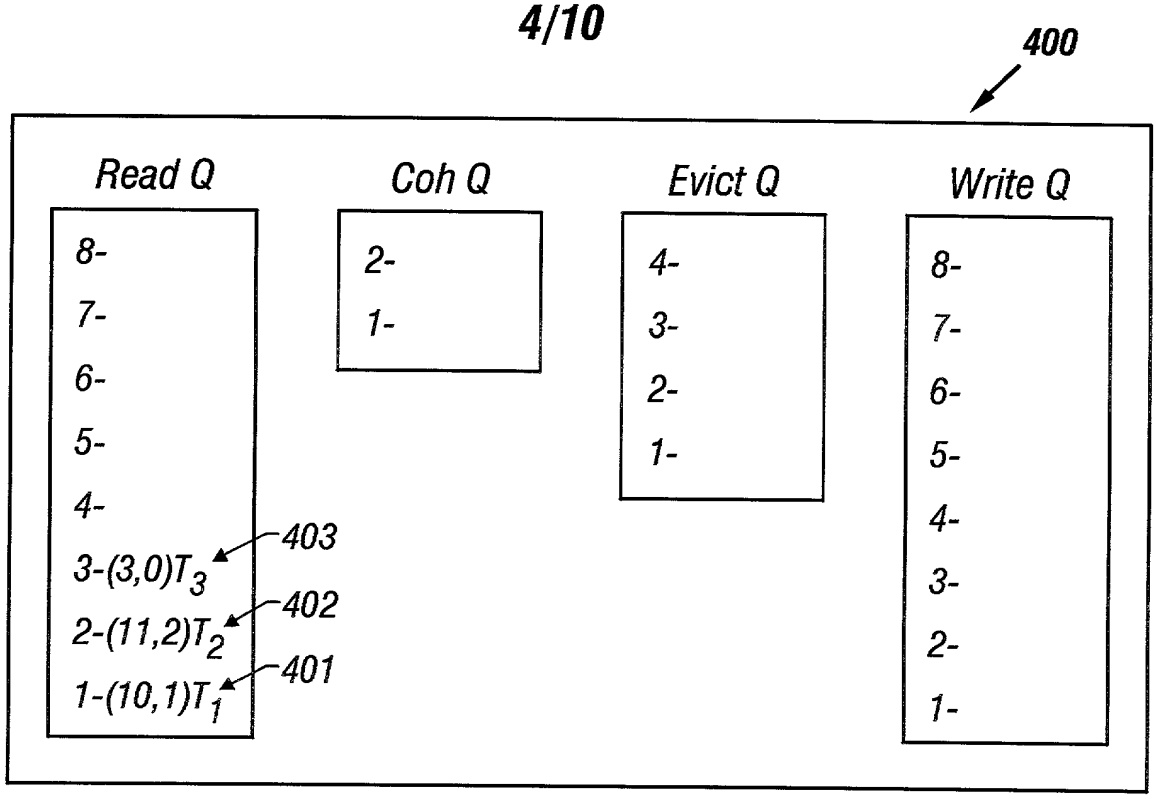
400
Read Q
Coh Q
Evict Q
Write Q
8-
7-
6-
5-
4-
3-(3,0)T3
2-(11,2)T2
1-(10,1)T1
2-
1-
4-
3-
2-
1-
8-
7-
6-
5-
4-
3-
2-
1-
403
402
401

FIG. 4

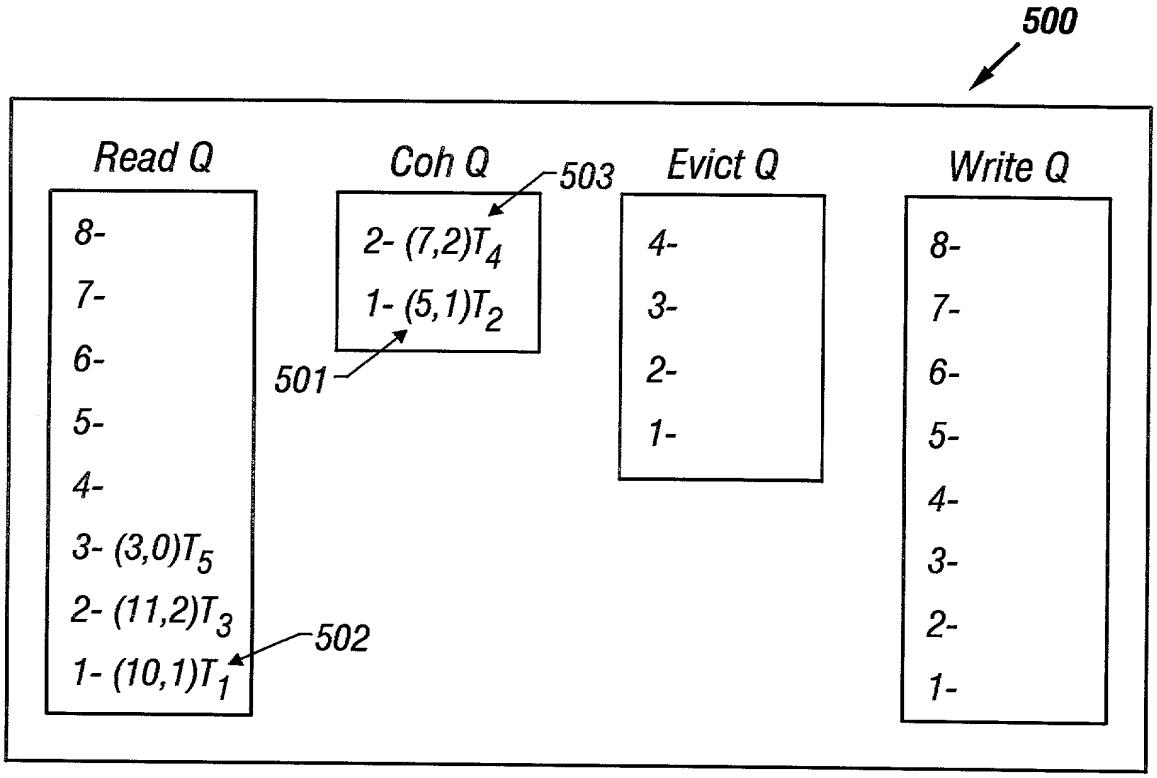
500
Read Q
Coh Q
Evict Q
Write Q
8-
7-
6-
5-
4-
3- (3,0)T5
2- (11,2)T3
1- (10,1)T1
2- (7,2)T4
1- (5,1)T2
4-
3-
2-
1-
8-
7-
6-
5-
4-
3-
2-
1-
503
501
502

FIG. 5

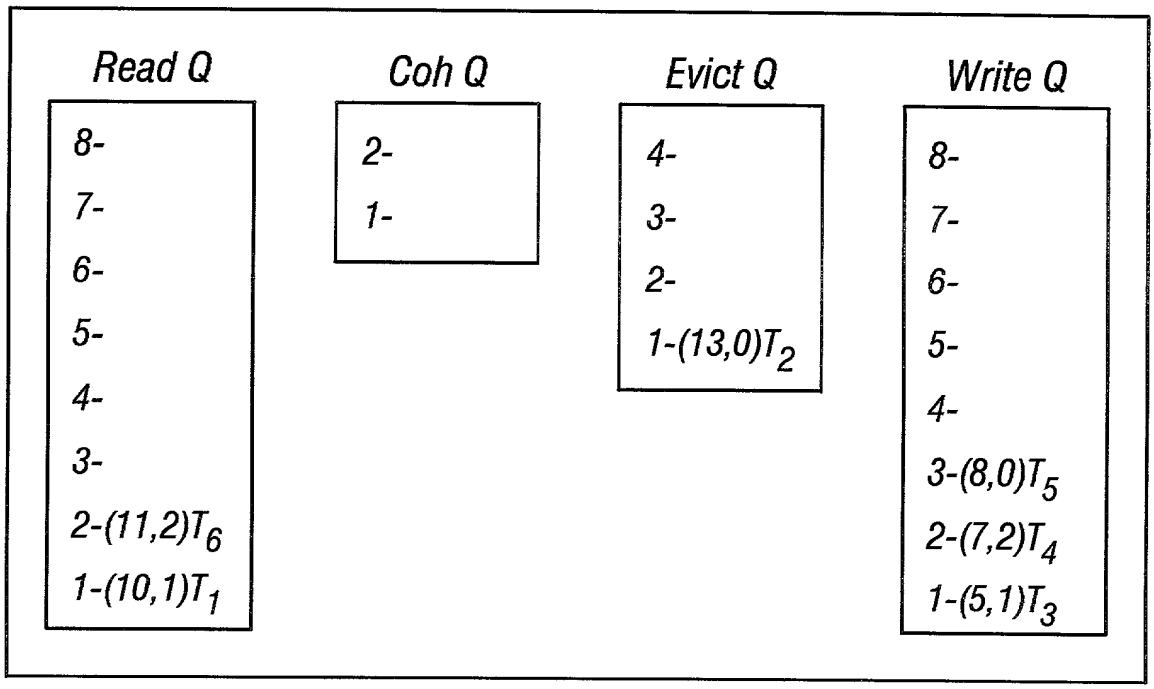
Read Q
8-
7-
6-
5-
4-
3-
2-(11,2)T6
1-(10,1)T1
Coh Q
2-
1-
Evict Q
4-
3-
2-
1-(13,0)T2
Write Q
8-
7-
6-
5-
4-
3-(8,0)T5
2-(7,2)T4
1-(5,1)T3

FIG. 6

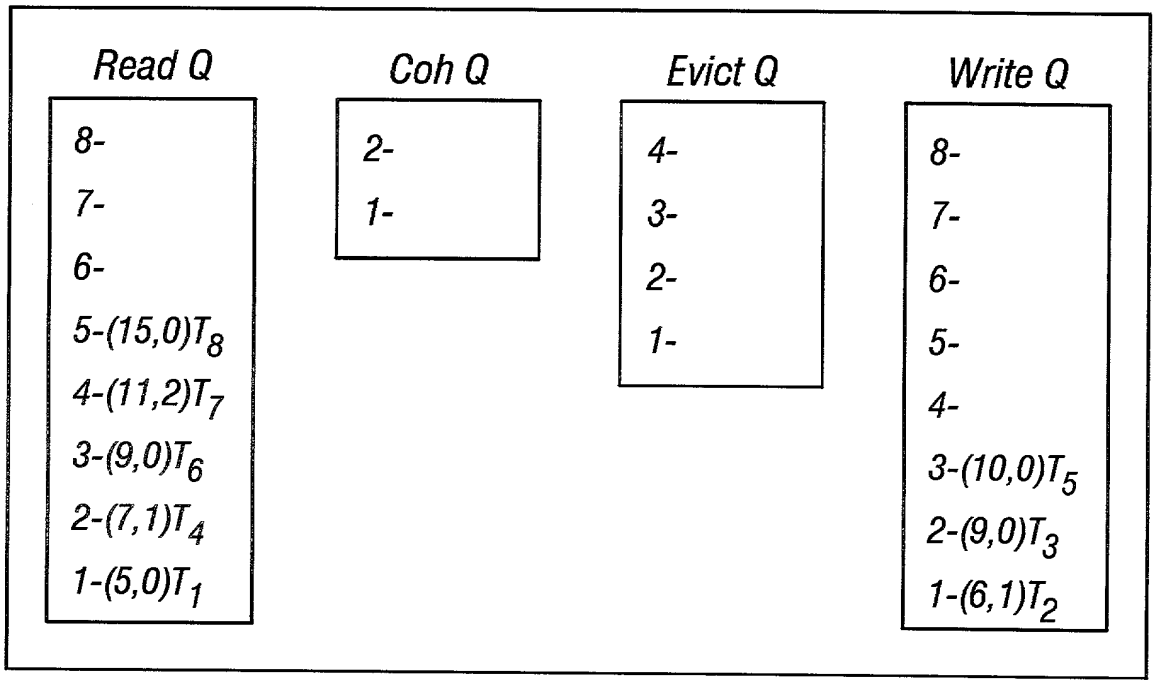
Read Q
8-
7-
6-
5-(15,0)T8
4-(11,2)T7
3-(9,0)T6
2-(7,1)T4
1-(5,0)T1
Coh Q
2-
1-
Evict Q
4-
3-
2-
1-
Write Q
8-
7-
6-
5-
4-
3-(10,0)T5
2-(9,0)T3
1-(6,1)T2

FIG. 7A

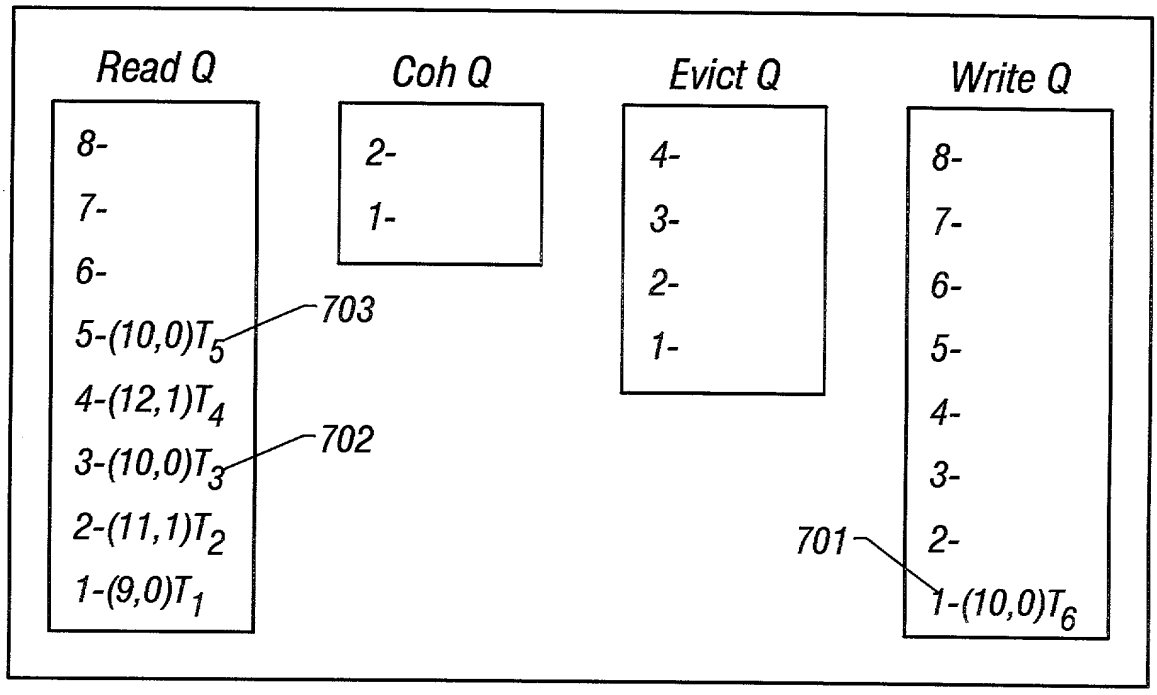
Read Q
Coh Q
Evict Q
Write Q
8-
7-
6-
5-(10,0)T5
4-(12,1)T4
3-(10,0)T3
2-(11,1)T2
1-(9,0)T1
2-
1-
4-
3-
2-
1-
8-
7-
6-
5-
4-
3-
2-
1-(10,0)T6
703
702
701

FIG. 7B

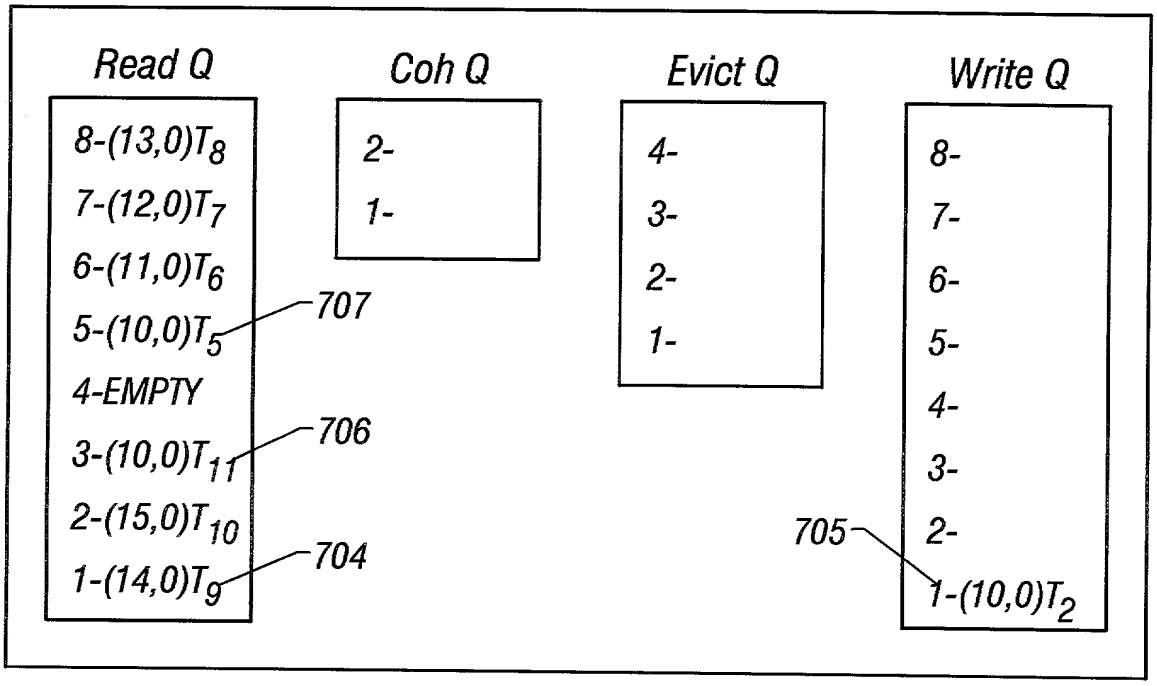
Read Q
Coh Q
Evict Q
Write Q
8-(13,0)T8
7-(12,0)T7
6-(11,0)T6
5-(10,0)T5
4-EMPTY
3-(10,0)T11
2-(15,0)T10
1-(14,0)T9
2-
1-
4-
3-
2-
1-
8-
7-
6-
5-
4-
3-
2-
1-(10,0)T2
707
706
704
705

FIG. 7C

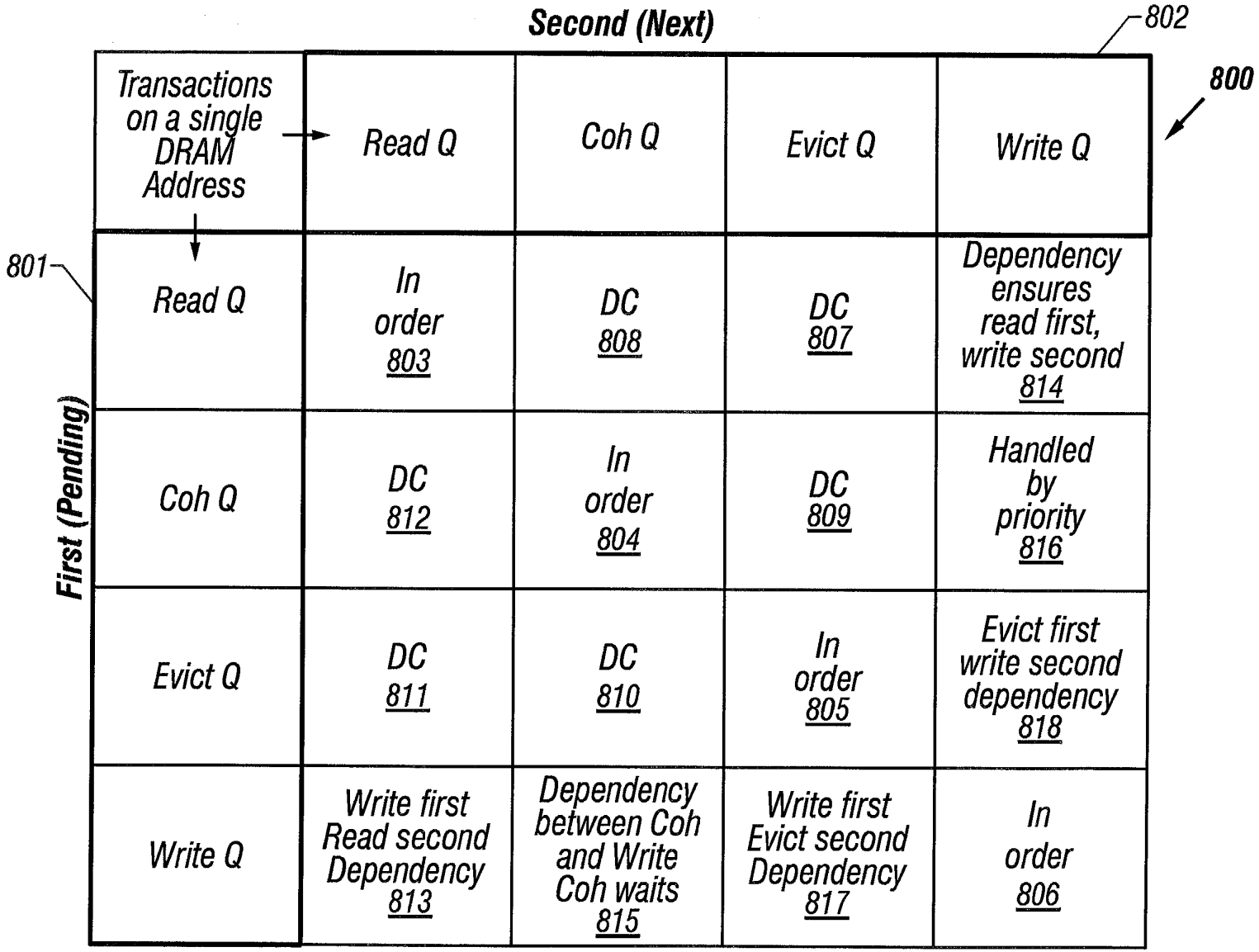

FIG. 8

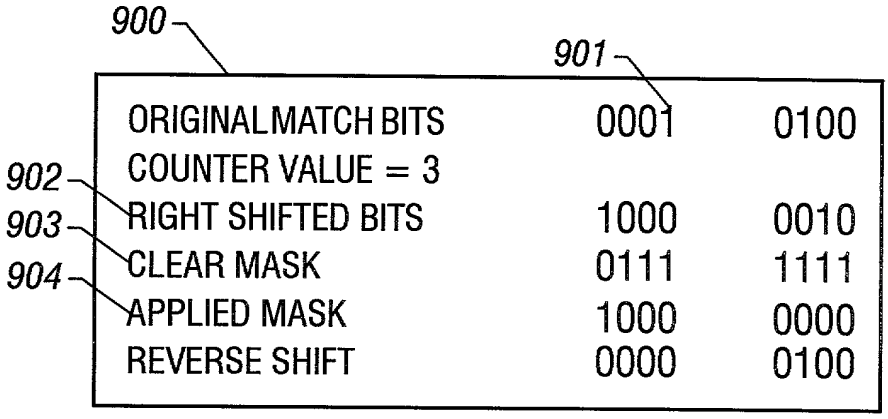

FIG. 9

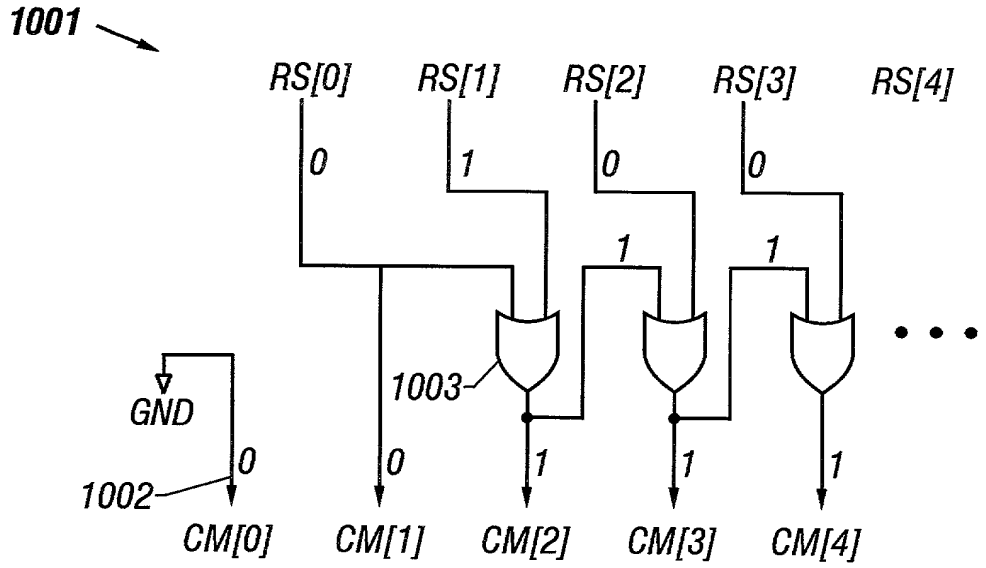

FIG. 10

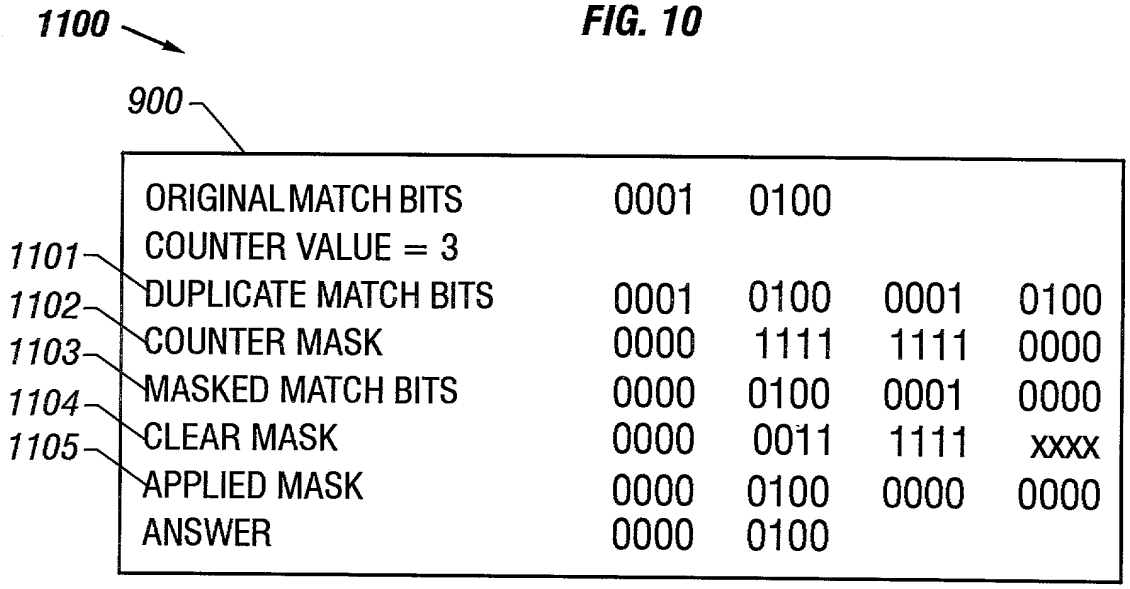

FIG. 11

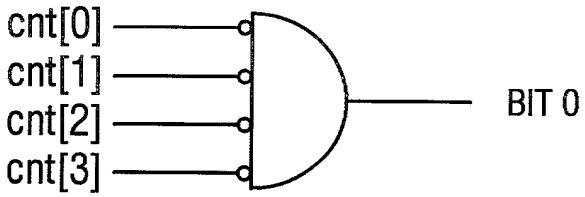

FIG. 12A

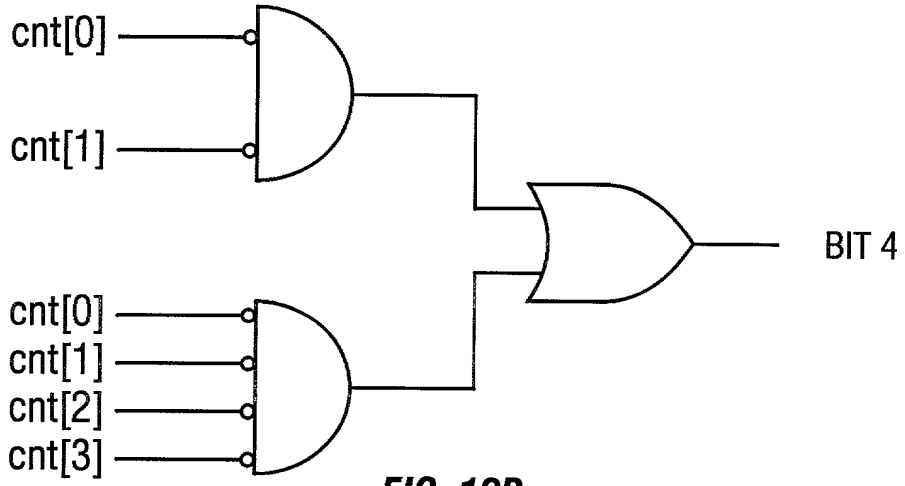

FIG. 12B

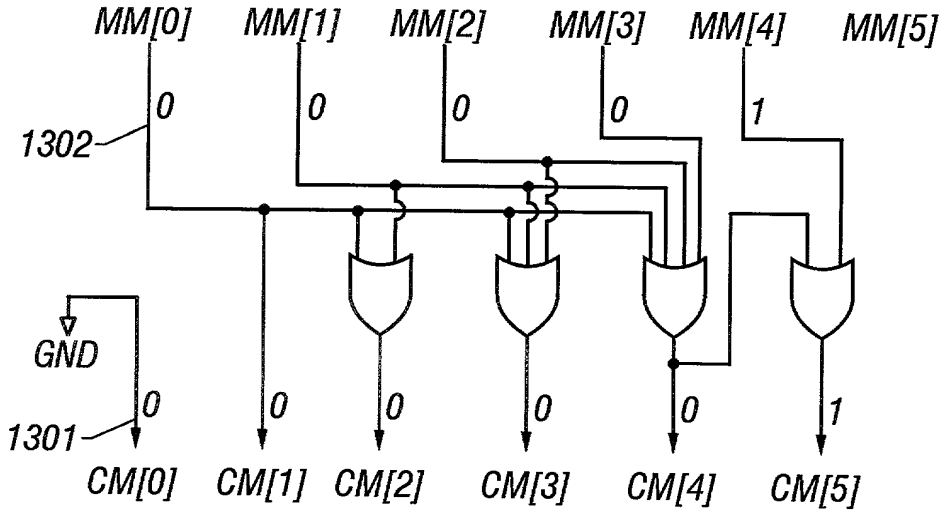

FIG. 13

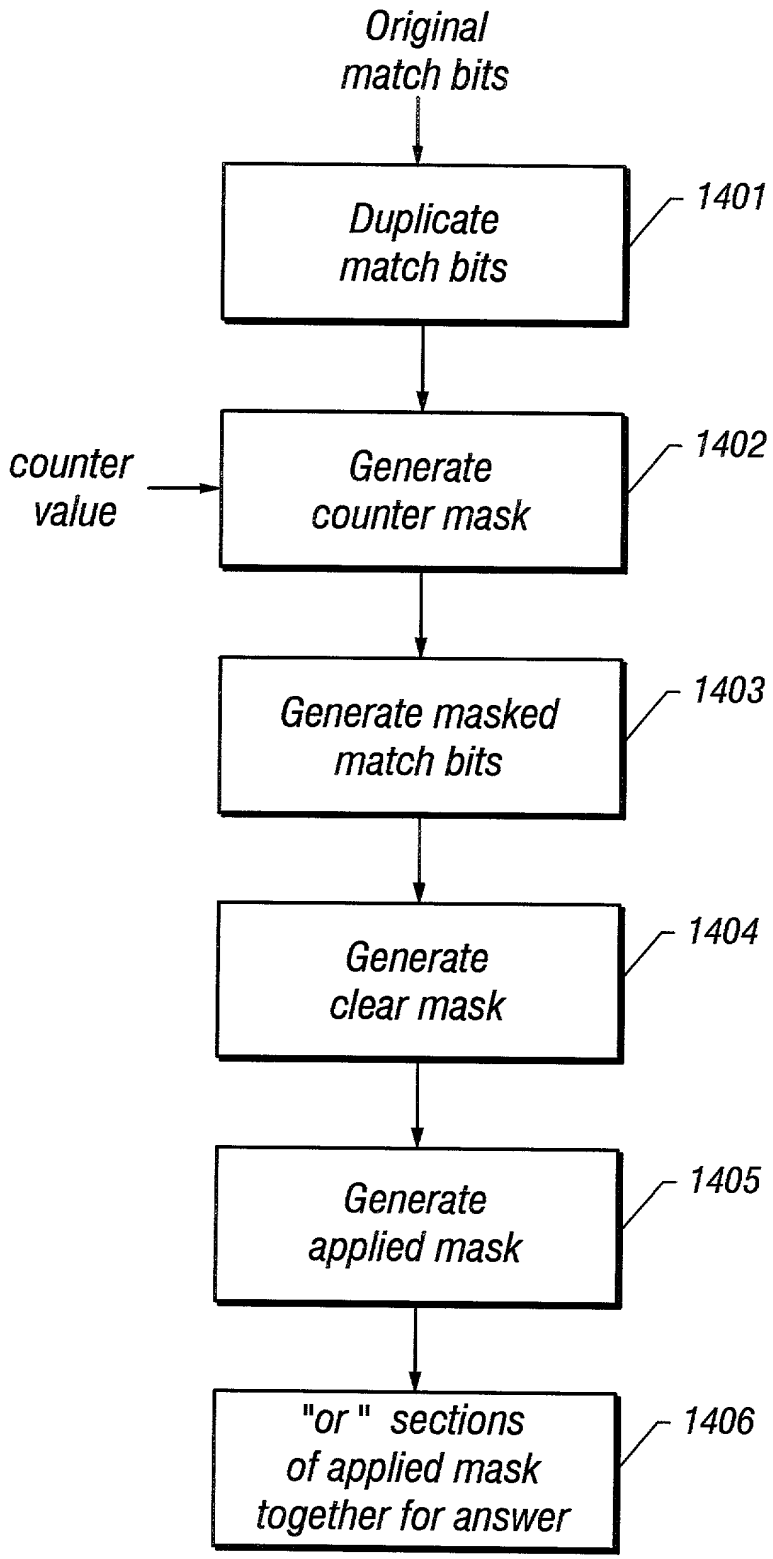
Original match bits
Duplicate match bits
1401
counter value
Generate counter mask
1402
Generate masked match bits
1403
Generate clear mask
1404
Generate applied mask
1405
"or " sections of applied mask together for answer
1406

FIG. 14